



US 20190094163A1

(19) **United States**(12) **Patent Application Publication**
Kamen et al.(10) **Pub. No.: US 2019/0094163 A1**(43) **Pub. Date: Mar. 28, 2019**(54) **SENSOR APPARATUS SYSTEMS, DEVICES
AND METHODS**(71) Applicant: **DEKA Products Limited Partnership,**
Manchester, NH (US)(72) Inventors: **Dean Kamen,** Bedford, NH (US); **N.
Christopher Perry,** Manchester, NH
(US); **Jason A. Demers,** Manchester,
NH (US); **Brian D. Tracey,** Litchfield,
NH (US); **Arun D. Chawan,** San
Francisco, CA (US); **Kevin L. Grant,**
Litchfield, NH (US)(73) Assignee: **DEKA Products Limited Partnership,**
Manchester, NH (US)(21) Appl. No.: **16/112,375**(22) Filed: **Aug. 24, 2018****Related U.S. Application Data**(63) Continuation of application No. 15/393,994, filed on
Dec. 29, 2016, now Pat. No. 10,060,867, which is a
continuation of application No. 14/672,764, filed on
Mar. 30, 2015, now Pat. No. 9,535,021, which is a
continuation of application No. 13/619,266, filed on
Sep. 14, 2012, now Pat. No. 8,992,075, which is a
continuation of application No. 12/038,474, filed onFeb. 27, 2008, now Pat. No. 8,491,184, which is a
continuation-in-part of application No. 11/871,821,
filed on Oct. 12, 2007, now abandoned.(60) Provisional application No. 60/921,314, filed on Apr.
2, 2007, provisional application No. 60/904,024, filed
on Feb. 27, 2007.**Publication Classification**(51) **Int. Cl.**
G01N 25/18 (2006.01)(52) **U.S. Cl.**
CPC **G01N 25/18** (2013.01)(57) **ABSTRACT**

A sensor apparatus and sensor apparatus system for use in conjunction with a cassette, including a disposable or replaceable cassette. In some embodiments, the cassette includes a thermal well for permitting the sensing of various properties of a subject media. The thermal well includes a hollow housing of a thermally conductive material. In other embodiments, the cassette includes sensor leads for sensing of various properties of a subject media. The thermal well has an inner surface shaped so as to form a mating relationship with a sensing probe. The mating thermally couples the inner surface with a sensing probe. In some embodiments, the thermal well is located on a disposable portion and the sensing probe on a reusable portion.

